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MOBILE COMPUTING DEVICE HAVING A FLEXIBLE HINGE STRUCTURE

BACKGROUND

Mobile computing devices may be found in a variety of form factors, such as a tablet, a mobile communications device (e.g., a phone), and so forth. As these form factors are optimized for mobile use, a size of the device becomes a primary consideration in its design and implementation as well as in a choice made by a consumer as to which device to purchase.

A user, for instance, may purchase a mobile phone having a relatively small display device to make phone calls, text, and so on. If a larger display device is desired, a user may also purchase a tablet to answer emails, browse the Internet, and so on. Additionally, form factors have been developed that represent a compromise between these form factors, such as a “phablet” that may have decreased mobility due to an increase in size of a display device. As such, conventional mobile computing device form factors often forced a user to make a choice regarding a form factor that may involve a compromise between these form factors (e.g., a “phablet”), purchase of multiple devices, and so on.

SUMMARY

Techniques are described involving a mobile computing device having a flexible hinge structure. In one or more implementations, a mobile computing device includes a plurality of housings, a display device that is flexible, and a flexible hinge structure. The flexible hinge structure secures the plurality of housings to each other, permits the plurality of housings to rotate about an axis in relation to each other, and supports a continuous viewing area of the display device that extends across the plurality of housings and the flexible hinge structure.

In one or more implementations, a mobile computing device includes a display device that is flexible, a plurality of housings, and a plurality of flexible hinge structures. The plurality of flexible hinge structures secures the plurality of housings, one to another, permits the plurality of housings to rotate about an axis in relation to each other, and supports a continuous viewing area of the display device that extends across the plurality of housings and the plurality of flexible hinge structures thereby forming a continuous surface.

In one or more implementations, a mobile computing device includes a plurality of housings, each of which including a first outer surface, a display device that is flexible and is secured to the first outer surfaces of the plurality of housings, and a flexible hinge structure. The flexible hinge structure secures the plurality of housings to each other, permits the plurality of housings to rotate about an axis in relation to each other, and includes a first flexible member that has a first outer surface to which the display device is secured.

In one or more implementations, a device includes a plurality of planar surfaces and a flexible hinge structure joining the plurality of planar surfaces and configured to permit rotation about an axis, the flexible hinge structure including a first member having an outer surface that is configured to be secured to a display device.

This Summary is provided to introduce a selection of concepts in a simplified form that are further described below in the Detailed Description. This Summary is not intended to identify key features or essential features of the

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claimed subject matter, nor is it intended to be used as an aid in determining the scope of the claimed subject matter.

BRIEF DESCRIPTION OF THE DRAWINGS

The detailed description is described with reference to the accompanying figures. In the figures, the left-most digit(s) of a reference number identifies the figure in which the reference number first appears. The use of the same reference numbers in different instances in the description and the figures may indicate similar or identical items. Entities represented in the figures may be indicative of one or more entities and thus reference may be made interchangeably to single or plural forms of the entities in the discussion.

FIG. 1 is an illustration of an environment in an example implementation that is operable to employ a mobile computing device having a flexible hinge structure.

FIGS. 2A and 2B depict an example implementation in which additional configurations that are supported through movement of the plurality of housings using the flexible hinge structure are shown.

FIGS. 3A, 3B, and 3C depict an example implementation showing cross sections of the configurations of FIGS. 1, 2A, and 2B and an example of the flexible hinge structure in greater detail.

FIG. 4 depicts an example implementation in which the mobile computing device of FIG. 1 assumes a tablet configuration and employs a biasing mechanism to promote stability of the first and second housings in relation to each other to thereby promote stability while in this configuration.

FIG. 5 depicts an example implementation in which the mobile computing device of FIG. 1 assumes an open configuration in which appendages of a biasing mechanism of FIG. 4 are retracted and another biasing mechanism is employed to promote stability in this configuration.

FIGS. 6A and 6B depict an example implementation showing cross sections of the biasing mechanism of FIG. 5 in an open stacked configuration and a tablet configuration.

FIGS. 7A and 7B depict an example implementation in which additional configurations are shown that are supported through movement of three housings using a plurality of flexible hinge structures.

FIGS. 8A and 8B depict an example implementation in which further configurations are shown that are supported through movement of three housings using a plurality of flexible hinge structures.

FIGS. 9A, 9B, and 9C depict an example implementation showing cross sections of configurations in which the mobile computing device of FIGS. 7A and 7B may be placed through use of a plurality of flexible hinge structures.

FIGS. 10A and 10B depict an example implementation describing aspect ratios and sizes that may be employed by the mobile computing device of FIGS. 1, 7A and 7B.

FIGS. 11A and 11B depict an example implementation in which example positions of antennas are shown for different arrangements of the mobile computing device.

FIGS. 12A, 12B, 13A, and 13B depict example implementations in which the mobile computing device of FIG. 1 includes first and second housings that are connected using a sliding arrangement.

FIG. 14 depicts an example implementation showing a peripheral device as communicatively and physically coupled to the mobile computing device of FIGS. 7A and 7B.